

ABSTRACT

A collision free access method is disclosed for scheduling the access of mobile stations to cellular network having an air interface built in TDMA-CDMA technique where the access procedure is performed on two steps: in the first the mobile station sends a signature for getting the network acknowledgement and the second step is for transmitting the RACH message and the RACH message can be of variable size. The proposed method allows for a multimode operation of the cellular network where the different modes allow for different RACH message sizes based on the fact that the mobile stations adapt the values of the parameters which control the access procedure based on the parameter values of the RACH message they are requested to send according to the supported mode.